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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/030,532

Filing Date: May 20, 2002

Appellant(s): HARTUNG, ROLF

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Manu Tejwani  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 12/17/07 appealing from the Office action  
mailed 7/19/07.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: although appellant is correct in stating that claims 17, 18, 21, 22, 25, 26, 28, and 31 are rejected under both 35 U.S.C. 112/2<sup>nd</sup> par. and 103(a), the 103(a) rejection sets forth these claims as being obvious over Yonemizu et al in view of Parodi et al and Soraoka et al, **not** Parodi et al in view of Yonemizu et al and Soraoka et al, as stated by appellant.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,958,145	Yonemizu et al	9-1999
5,651,823	Parodi et al	7-1997
7,201,551	Soraoka et al	4-2007

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 17, 18, 21, 22, 25, 26, 28, and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 17, line 8, the phraseology "in front of" is vague in that the chamber has not been set forth as having any particular directional orientation such as front, rear, etc., and thus such a limitation would appear to be patentably meaningless.

Similarly, in line 10, the terminology "transverse" is vague in that it fails to specify relative to what the guide is transversely arranged.

Claims 17, 18, 21, 22, 25, 26, 28, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yonemizu et al (US 5,958,145) in view of Parodi et al (US 5651,823) and Soraoka et al (5,855,726).

Yonemizu shows a wafer handling apparatus configured to place wafers from a cassette C disposed on a loading station 1 into a processing chamber 2 comprised of heating and cooling stations 22, comprising "external" handling device 11 having a wafer holding section (not explicitly labeled), which is considered to be "grippers", absent any structural limitations of the term, the external handling device disposed in

front of the processing chamber for transferring wafers between a cassette and the processing chamber, and "internal" handling device 3 within the chamber, the internal handling device inherently provided with a "transverse guide", as broadly and indefinitely claimed, and having a fork 31 arranged in a mount for moving with at least two degrees of freedom (col. 6, lines 4-17), the fork arranged to receive a wafer from the external handling device and to move wafers between the heating and cooling plates and back to the external handling device, wherein the cassette is disposed on the loading station in front of the processing chamber.

Parodi, as noted in previous Office actions, shows a similar apparatus including cassettes disposed on loading stations 19, 20 in front of processing chamber 17, heating and cooling stations 124, 126, 128 disposed "one in front of the other", "external" handling device 13 having grippers 14, "internal" handling device 208 with transverse guide 324, and enclosure 11 surrounding the processing chamber and the external handling device.

Soraoka shows a vacuum processing apparatus for wafers including enclosure 100, cassette loading station 16, external handling device 9, internal handling device 10, and vacuum processing chambers 6, 7.

Yonemizu does not explicitly show an enclosure surrounding the external handling device and the chamber. However, it is extremely well known in the wafer handling art to process wafers in a clean room environment, i.e., one in which an enclosure would surround the critical working components of the system to ensure cleanliness. Therefore, if not inherent, it would be highly likely that an enclosure would

be a desirable feature of the Yonemizu apparatus. Furthermore, both Parodi and Soraoka show an enclosure as claimed in a similar environment. It therefore would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Yonemizu by adding an enclosure, if not inherent, as shown by Parodi and Soraoka, to ensure cleanliness in the working environment.

Yonemizu shows the heating and cooling stations to be vertically stacked on top of each other, rather than one in front of the other. As noted above, Parodi shows the heating and cooling stations to be disposed one in front of the other, and in view of this teaching, it would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Yonemizu with such a feature, as this would merely be an art recognized alternate equivalent means of arranging heating and cooling stations in a wafer processing environment.

Yonemizu does not show the processing chamber to be a vacuum chamber. However, it is extremely well known in the wafer handling art to process wafers in a vacuum chamber. Furthermore, as noted above, Soraoka shows the processing chamber to be a vacuum chamber. Soraoka also shows the cassette loading station and the external handling device to be outside the vacuum chamber. The vacuum processing chamber can include various types of processing, including rinsing (i.e., washing), which is the type of processing disclosed by Yonemizu. Thus, it would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Yonemizu by providing the processing chamber as a vacuum

chamber, as shown by Soraoka, as this would merely be a well known and art recognized means of processing (including washing) wafers in a chamber.

**(10) Response to Argument**

With regard to the 112/2<sup>nd</sup> par. rejection, appellant asserts that the terminology "in front of" is definite because the specification allegedly provides an orientational reference to the rear of the chamber and because "any or all sides of the chamber" are within the meaning of the term which is equated to mean "facing someone or something". This is not persuasive. First, limitations from the specification are not read into the claims, and even if they were, appellant's arguments are contradictory because if "in front of" is taken to mean oriented relative to the rear of the chamber as described in the specification, then "any or all sides of the chamber" would not be within the meaning of the term. Furthermore, a person or object could clearly be "facing someone or something", yet be to the side or rear of that person or object. If "in front of" is equated to being on any or all sides of an object, including the side or rear, as argued by appellant, then the examiner's position that the term is patentably meaningless is only reinforced. This is also true of the term "transverse".

Appellant's arguments with respect to the terminology "two degrees of freedom" are persuasive and that portion of the 112/2<sup>nd</sup> par. rejection is withdrawn.

Regarding the obviousness rejection, it is first noted that appellant, on page 15 of the brief, sets out portions of claim 17 and includes bracketing to indicate language not actually in the claim. Appellant uses this bracketing in an apparent attempt to equate or read limitations into the claims which are not necessarily there, e.g., the use of the term

"outside" in brackets after the phrase "in front of". It is the examiner's position that these terms are not equivalent, and in fact appellant's attempt to substitute these terms one for the other in the non-entered after-final amendment was refused for this reason. Appellant argues that neither Yonemizu nor Parodi teach an internal handling device within a vacuum chamber and coupled to an external handling device to move wafers from in front of the chamber. Appellant further argues that both references show an atmospheric rather than vacuum processing chamber. However, this is exactly what the Soraoka reference addresses. Appellant dismisses this by asserting that "the use of washing liquids in Yonemizu's apparatus teaches away from a vacuum processing chamber", but, as previously noted, Soraoka explicitly states that the vacuum processing chamber can be used for several types of processing, including "rinsing" (i.e., washing: see e.g. col. 1, lines 23-31). In Soraoka the "external" robot is atmospheric and the "internal" robot is vacuum (col. 6, lines 1-14). Appellant appears to be trying to make a distinction between the load locks 4, 5 of Soraoka and the "wafer processing vacuum chamber" set forth in the claim. However, the load locks of Soraoka are clearly within the "vacuum processing block" 2. The atmospheric (external) robot 9 transfers wafers into the load locks and thus, into the vacuum chamber. Nothing in the claim requires the external handling robot to directly transfer a wafer into the vacuum processing chamber in a manner that precludes intermediary load locks.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/James Keenan/

Primary Examiner

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